



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/893,695

06/29/2001

Andrew L. Smith

5600

4961

7590

12/24/2002

Dorsey & Whitney LLP  
Suite 300 South  
1001 Pennsylvania Avenue, N.W.  
Washington, DC 20004

EXAMINER

NGHIEM, MICHAEL P

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 12/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/893,695

Applicant(s)

SMITH, ANDREW L.

Examiner

Michael P Nghiem

Art Unit

2863



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 21-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,8-11 and 13-19 is/are rejected.
- 7) ☒ Claim(s) 3,6,7,12 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 21 October 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restriction***

1. Applicant's election without traverse of Species I of Figs. 1-4 and 7, directed to claims 1-3 and 5-24 in Paper No. 5 is acknowledged. However, claims 21-24 recite repeating measurements and samplings and averaging the results. These limitations are directed to Species 3 (Specification, page 14, lines 13-19). Thus, claims 4 and 21-24 are withdrawn from further consideration.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

- "input" (page 10, line 3) should be -- output -- and "output" (page 10, line 3) should be -- input --.

Appropriate correction is required.

### ***Drawings***

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on October 21, 2002, have been acknowledged. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid

Art Unit: 2863

abandonment of the application. The correction to the drawings will not be held in abeyance.

### ***Claim Objections***

4. Claim 2 is objected to because of the following informalities: "the first and second frequency signals" (line 2) should be -- a third frequency signal -- and "the first frequency signal" (line 3) should be -- the second frequency signal --. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1, 2, 5, 8-11, 13-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Guenther et al. (US 6,097,755).

Guenther et al. discloses all the claimed features of the invention including:

- a circuit and method (Figs. 3, 9) for determining an indication of a length of a conductor (column 1, lines 41-44), comprising:

- a terminal (24) for connection to a conductor under test (Fig. 3);
  - a pulse source circuit (50) coupled to the terminal for providing a signal to the conductor for use in determining an indication of the length of the conductor (column 5, lines 23-26);
  - a frequency generator circuit (Fig. 9), coupled to the pulse source circuit, for producing first and second frequency signals (signals from PW1, PW2) having a particular relationship (Fig. 9);
  - a mixer (54), coupled to the frequency generator circuit and the pulse source circuit, for receiving signals related to the first and second frequency signals and for mixing the received signals to produce an output signal (output from 54, Fig. 9);
  - a frequency generator (80, 82) producing two frequencies;
  - a multiplier circuit (88, 90), coupled to the frequency generator, for receiving the two frequencies and producing the first and second frequency signals, wherein the second frequency signal is a multiple of the first frequency signal (Fig. 9);
  - the mixer comprises a sample-hold latch (28);
  - a capacitor (60) coupled between the terminal and the pulse source circuit;

Art Unit: 2863

- steering logic (data is digitized via 32) coupled between the terminal and the pulse source circuit;

- a re-synchronizer (80) coupled to the sample-and-hold latch;

- a voltage comparator (34) coupled to the pulse source and the terminal;

- an amplifier (54) coupled between the pulse source and the terminal.

- a first clock (PW1) coupled to the sample-and-hold latch; and a second clock (PW2) coupled to the pulse source;

- a squaring flip-flop (82) coupled between the second clock and the pulse source;

- generating first and second frequency signals having a particular relationship (PW1, PW2, TGR);

- mixing signals related to the first and second frequency signals to produce an output signal (via 80, 82, 54);

- applying a pulse, based upon the output signal, to a terminal for connection to a conductor under test (Fig. 6);

- receiving a signal from the terminal and performing a voltage comparison of the received signal (34 receives voltage signal from 32);

- the mixing step includes using a flip-flop (80, 82) to mix the signals.

***Allowable Subject Matter***

6. Claims 3, 6, 7, 12, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Reasons for Allowance***

7. The combination or method as claimed wherein a phase-locked loop coupled to the frequency generator; and a divide by N circuit coupled to the phase-locked loop (claim 3) or a circuit for producing a signal having a fifty percent duty cycle of a received signal (claim 6) or a length error detector circuit coupled to the pulse source circuit and the mixer (claims 7, 12, 20) is not disclosed, suggested, or made obvious by the prior art of record.

***Contact Information***


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (703) 306-3445. The examiner can normally be reached on M-H from 6:30AM – 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached at (703) 308-3126. The fax phone numbers for

Art Unit: 2863

the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



**MICHAEL NGHIEM**  
**PRIMARY EXAMINER**  
Michael Nghiem

December 19, 2002